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PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements relating to Cam Mechanism.

I, HERMANN SCHOENING, a German national, of 23/24, Franziskanerweg, Berlin-Frohnau, Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of this invention is to provide cam mechanism whereby movement can be imparted in two directions alternatively, according to the direction of rotation of the cam, the cam effecting only one actuation by rotating in one or other direction, however many revolutions it makes, but continuing in engagement with the part which it actuates, so that when its direction of rotation is reversed it moves that part once in the opposite direction and then leaves it stationary till another reversal of rotation is effected.

The cam is of the kind in which a follower engaging with a groove or track is deflected through a passage into another parallel groove or track by the action of a switch or gate when the cam is rotating in one direction.

According to the invention there are two passages, each having a gate, and the gates are normally held open by springs so that one of them projects into one of the tracks and the other projects into the other track. In each track one of the gates is in the path of the follower, but when the cam is rotating in one direction the gate yields to the follower, without displacing it, whereas when the cam rotates in the other direction the gate deflects the follower into the other track.

I may arrange that the completion of each movement of the control member, due to transfer from one track to the other, opens one of two automatically closing electric contact devices, this contact device being in a circuit supplying current to an electromotor for driving the cam in the direction required for effecting the transfer. The other contact device which is automatically closed, is in a circuit for rotating the motor in the opposite direction, this circuit being completed when required by closing a switch in

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another part of it.

Two examples of mechanism according to the invention are shown in the annexed drawings, in Figs. 1 and 2 respectively.

In Fig. 1 *h* represents the cam, which has teeth at its rim for engagement with a pinion *p* driven by a reversible electromotor. The cam has two concentric grooves *d*, *e* for engagement with a follower or bowl *k* at one end of a double armed lever *i*. The lever has a toothed sector *z*, at its other end, engaged with a toothed wheel *o* connected to the part to be controlled. The ridge *r* between the cam grooves has two passages *s*, *t*, with spring loaded switch tongues or gates *f*, *g* which can close them but are normally held in the positions shown in the drawing.

By anti-clockwise rotation of the cam from the position shown in Fig. 1 the switch tongue *f*, lying in its normal position in the groove *e*, is caused to strike the bowl *k* and transfer the same through the passage *s* into the groove *d*. By this means the wheel *o* is rotated through a definite angle, and after the transfer of the bowl the cam can continue to rotate indefinitely in the same direction without moving the lever, as the switch tongue *g* yields when it strikes the bowl. On reversal of rotation of the cam, however, the tongue *g* when it strikes the bowl from the opposite side, re-transfers the bowl to the groove *e*, and the wheel is rotated in the direction opposite to that of the previous adjustment.

In the path of the lever *i* there are two automatically closing electric contact devices *m*, *n*, one or other of which the lever opens on completing each of its movements, thereby opening the electric circuit supplying the current by which the motor has been driven for imparting that movement. The contact device which is automatically closed on movement of the lever is in a circuit for rotating the motor in the opposite direction, so that this circuit is ready to be closed by a manually or automatically operated switch in another part thereof, when the lever is to be moved back.

In the modification shown in Fig. 2

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the cam grooves *d, e* are side by side on the circumference of a cam cylinder *h*, and the switch tongues *f, g* are arms of a double armed lever pivoted between the passages *s, t*.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Cam mechanism for the purpose set forth, comprising a cam having two tracks, with two passages whereby the tracks communicate with each other, a follower adapted to engage said tracks alternatively, and spring loaded switches or gates, one for each passage, normally projecting into said tracks respectively, each of said gates being adapted to transfer the follower from one track to the

other when striking the same in one direction, whereas it yields to said follower when striking it in the opposite direction.

2. Cam mechanism as claimed in claim 1, with a reversible electromotor for driving the cam and two automatically closing electric contact devices in motor circuits whereby the motor is driven in opposite directions respectively, each of said contact devices being opened automatically by completion of one of the movements of the follower.

Dated this 2nd day of March, 1934.

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Fig.1.

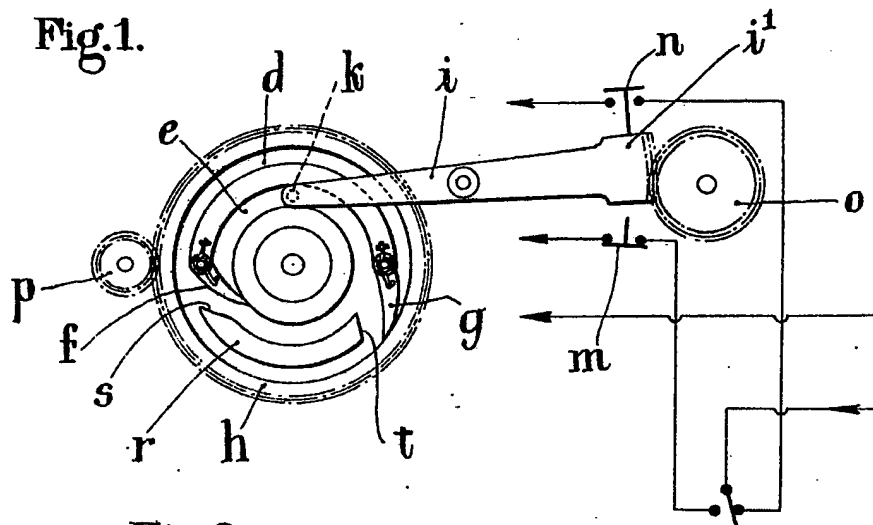


Fig.2.

